

Fig. 1

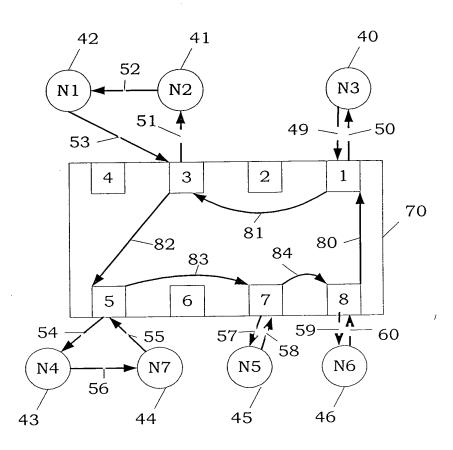
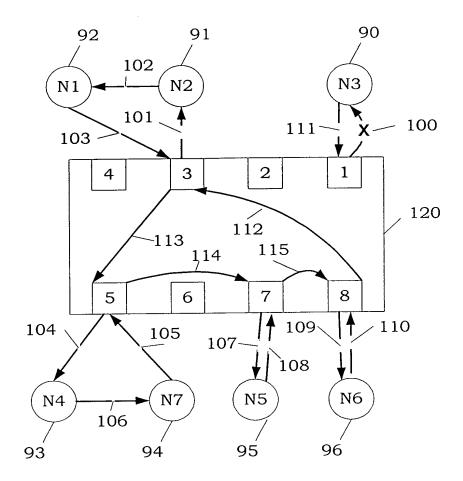


Fig. 2



Fibre Channel Arbitrated Loop Hub

Fig. 3

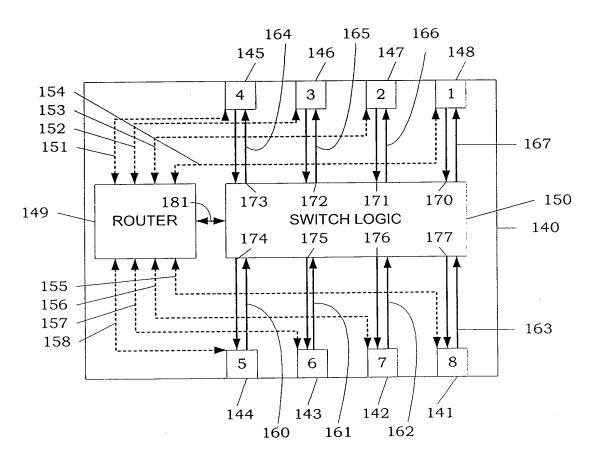


Fig. 4

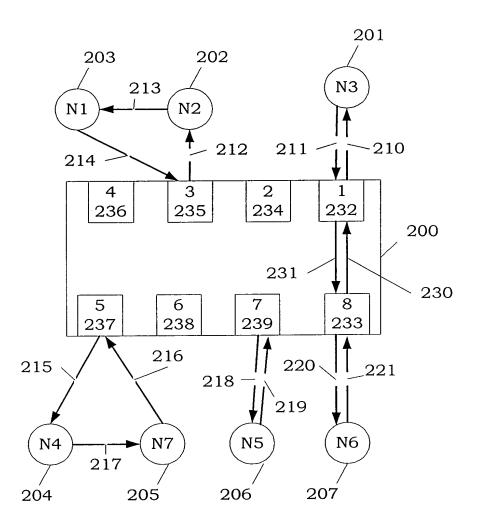


Fig. 5

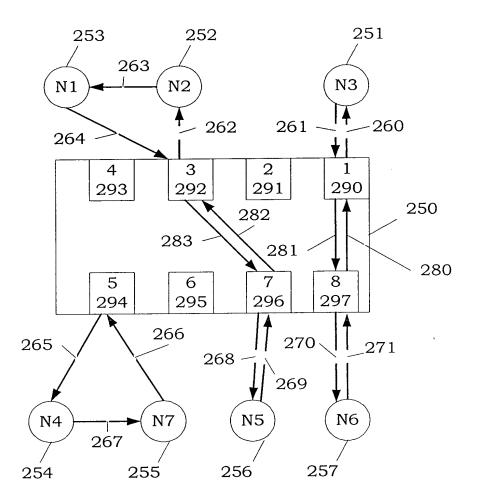
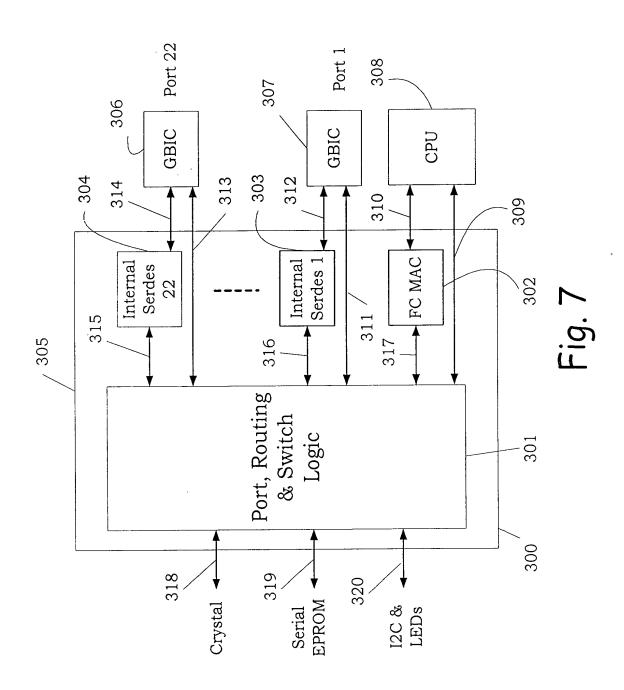


Fig. 6



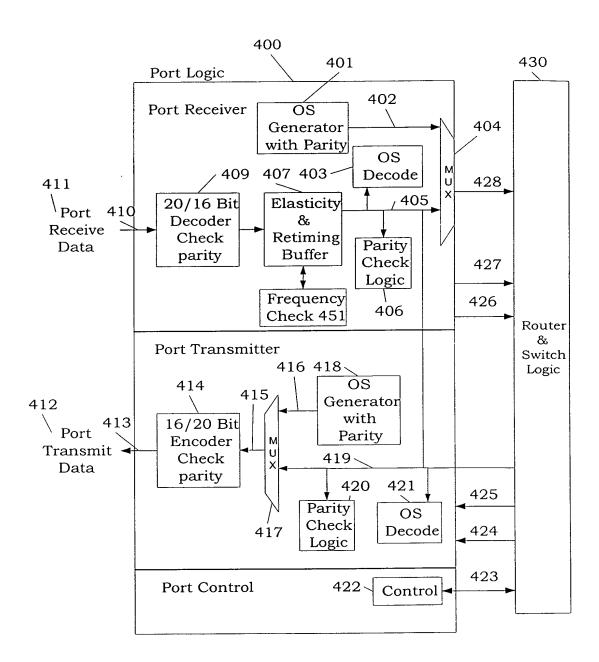


Fig. 8

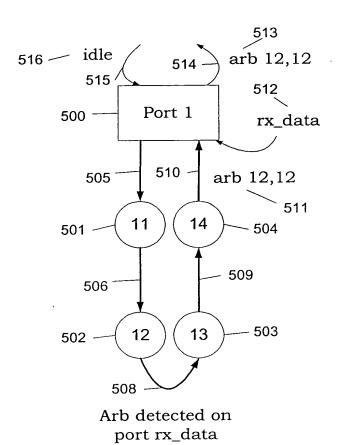
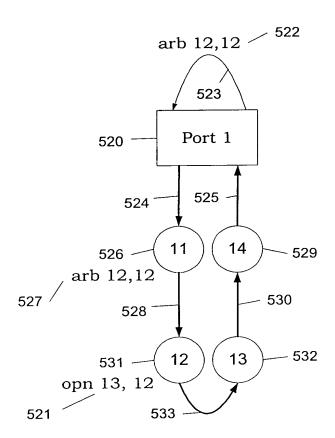
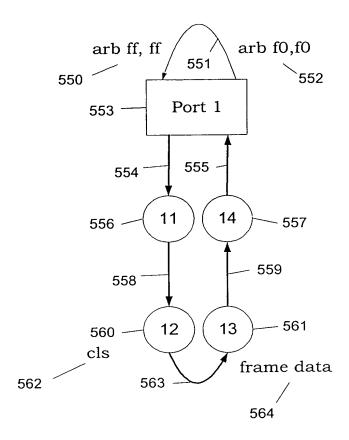


Fig 9a



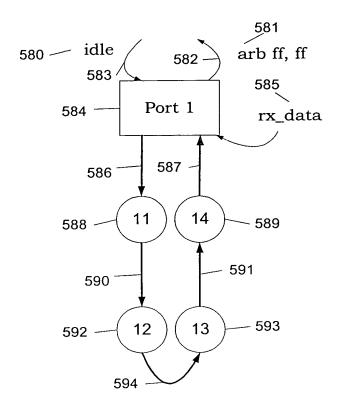
Connection established.
Open sourced

Fig 9b



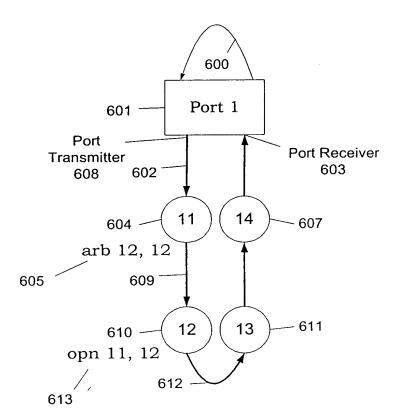
Arbf0 replaced with Arbff. Data Transfered. Close sourced.

Fig 9c



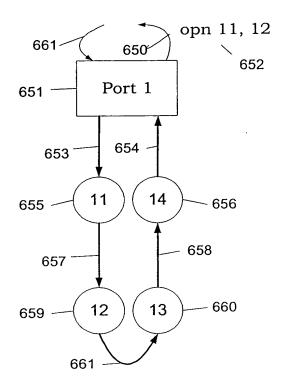
Arbff detected on port rx\_data. Disconnect. Source idles

Fig 9d



Arbs forwarded. Open sourced.

Fig 10a



Open detected at port receiver.

Port receiver holds open.

Provides ALPA to router and asserts opn\_connect\_req.

Fig 10b

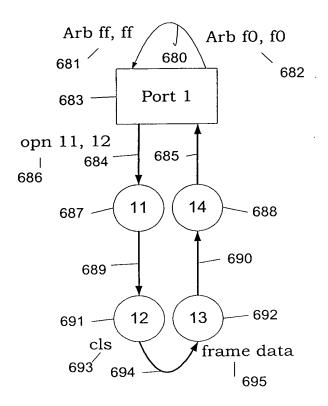
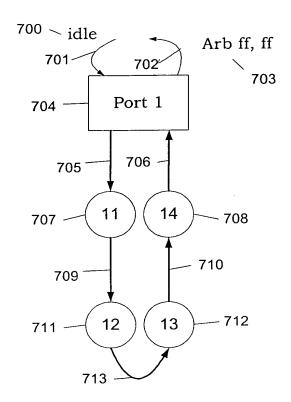
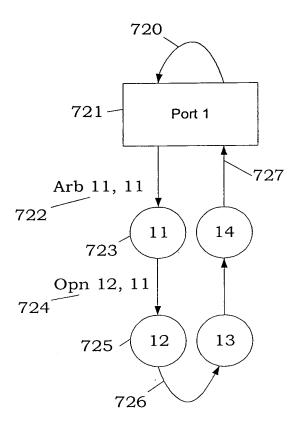


Fig 10c



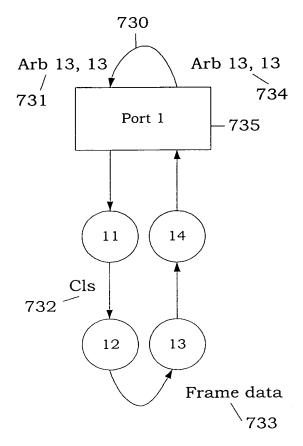
Arbff detected on port rx\_data. Disconnect. Source idles.

Fig 10d



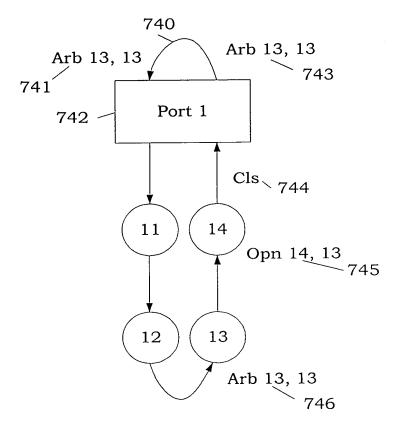
Arbs forwarded.
Open Sourced.

Fig 11a



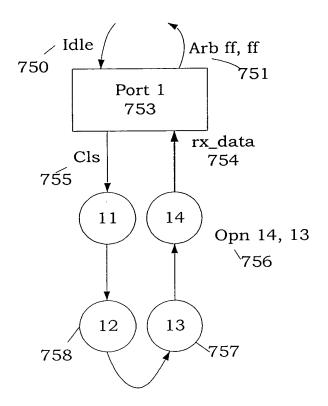
Arb 13 forwarded. Data Transfered. Close sourced.

Fig 11b



Close forwarded by node 12. Arb 13 received by node 13. Open sourced by node 13.

Fig 11c



Close source by node 13.
Forwarded by node 12.
Arb ff Detected on port rx\_data.
Disconnect.
Source idles.

Fig 11d

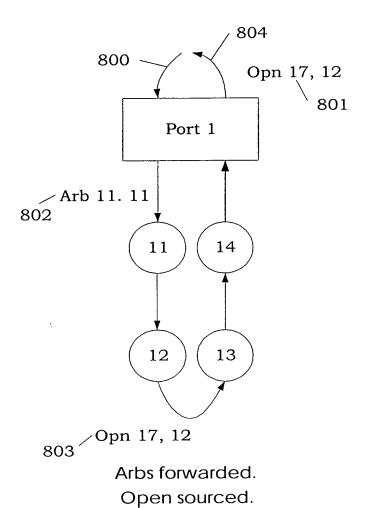
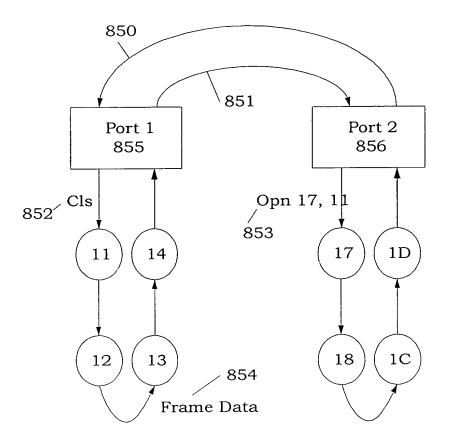


Fig 12a



Open forwarded to Port 2.

Data transferred.

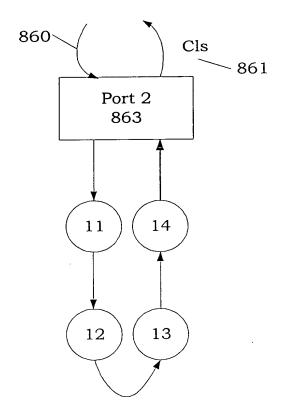
Close sourced.

Open received from Port 1.

Data received.

Close forwarded.

Fig 12b



Close detected at transmillter and receiver.
Connection broken.

Fig 12c

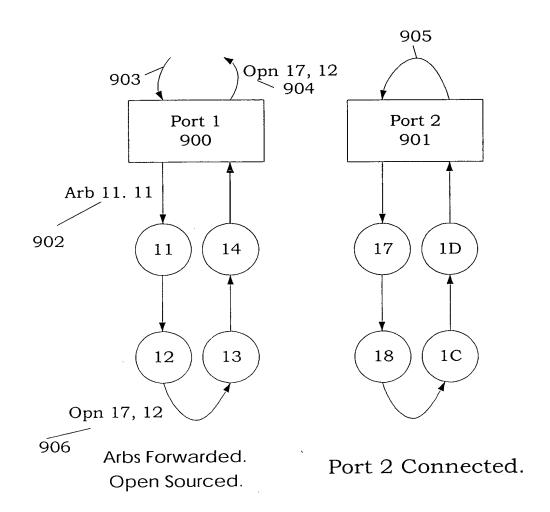
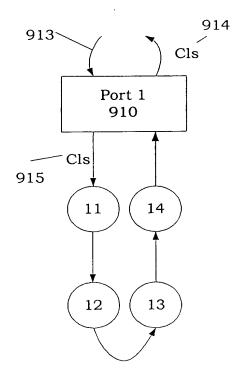
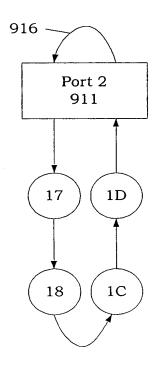


Fig 13a

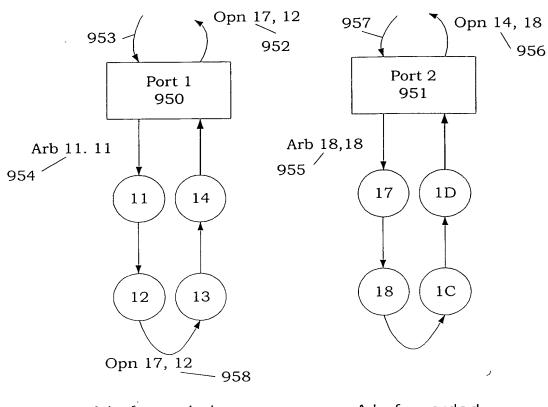




Cls detected at port receiver from node 12.
Cls sourced from port transmitter.

Port 2 still connected.

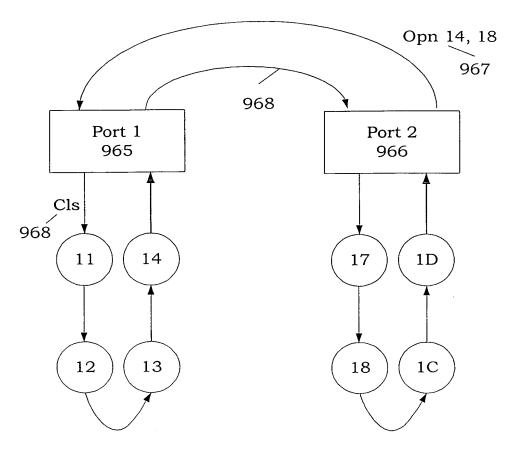
Fig 13b



Arbs forwarded.
Open sourced.

Arbs forwarded.
Open sourced.

Fig 14a

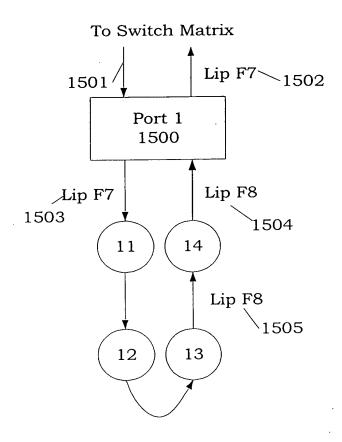


Port 1 connected as destination port.
Cls sourced from Port 1 transmitter.

Port 2 connected as source Port. Open sourced from Port 2 receiver.

Fig 14b

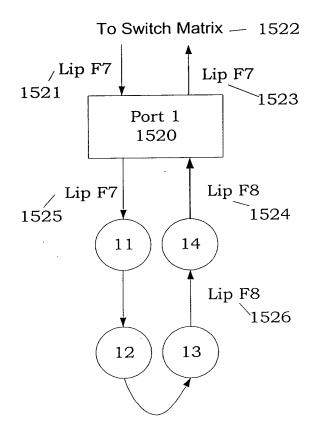
Router detects Lip RX'd signal. Router deasserts switched mode signal.



Lip F8 sourced by node 13.
Lip F8 replaced by Lip F7 at port receiver.
Lip F7 sourced at port transmitter.

Fig 15a

Router detects deassertion of port active. Router takes port out of operational loop.

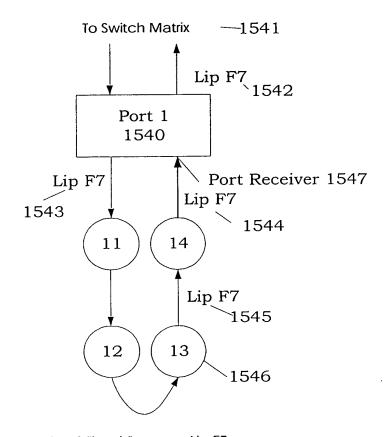


Lip F7 received at port transmitter. Port deasserts port active signal.

Fig 15b

Router detects Lip RX'd signal since port active is now asserted.

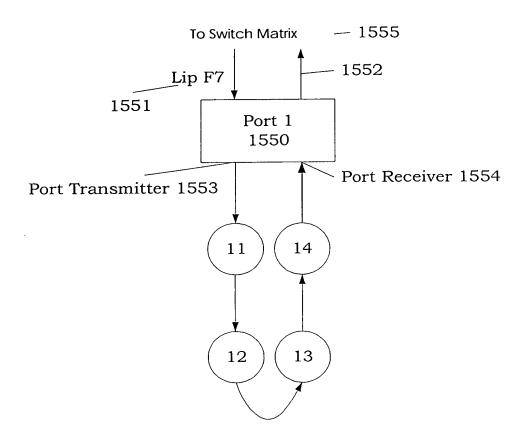
Router puts port back into the operaional loop.



Node 13 "heals", source Lip F7. Lip F7 received at port receiver. Port asserts Port\_Active.

Fig 15c

## Router continues with loop initialization



Port detects Lip F7 at port transmitter.
Port stops sourcing Lip F7 at port receiver.
Port stops sourcing Lip F7 at port transmitter.

Fig 15d

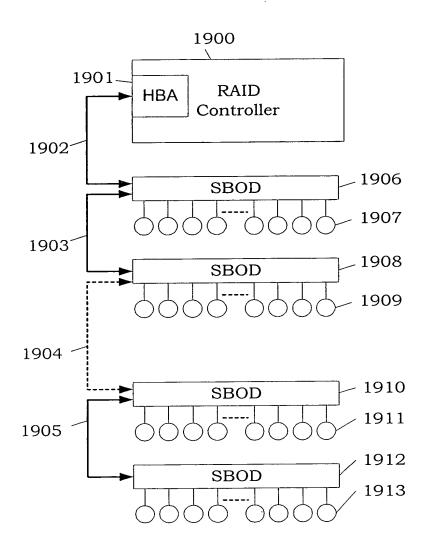


Fig. 16a

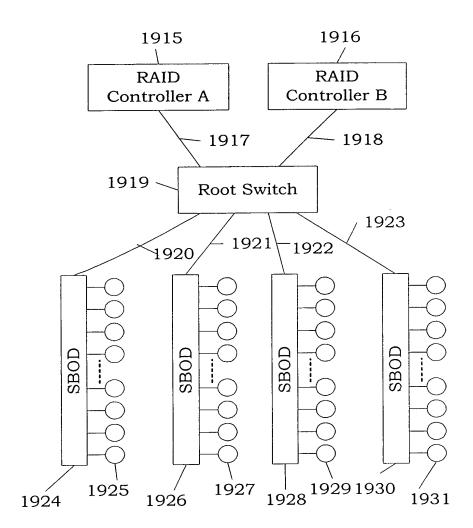


Fig. 16b

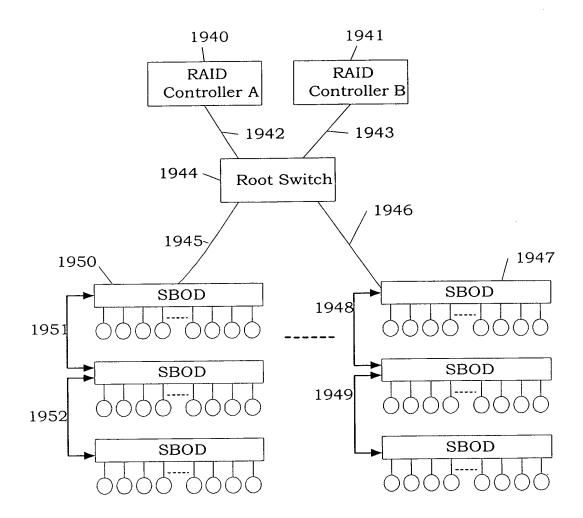


Fig. 16c

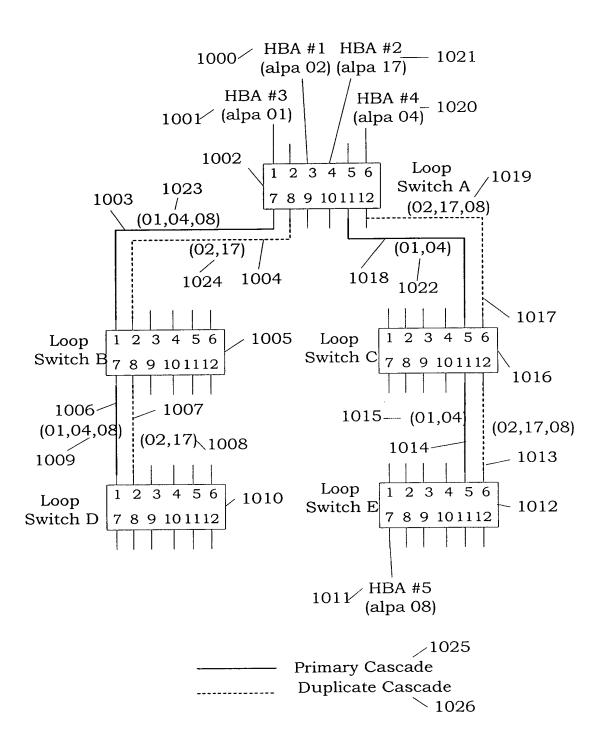


Fig. 17

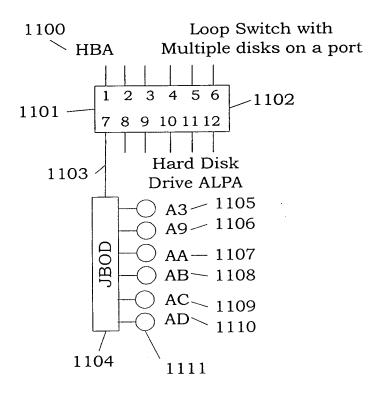
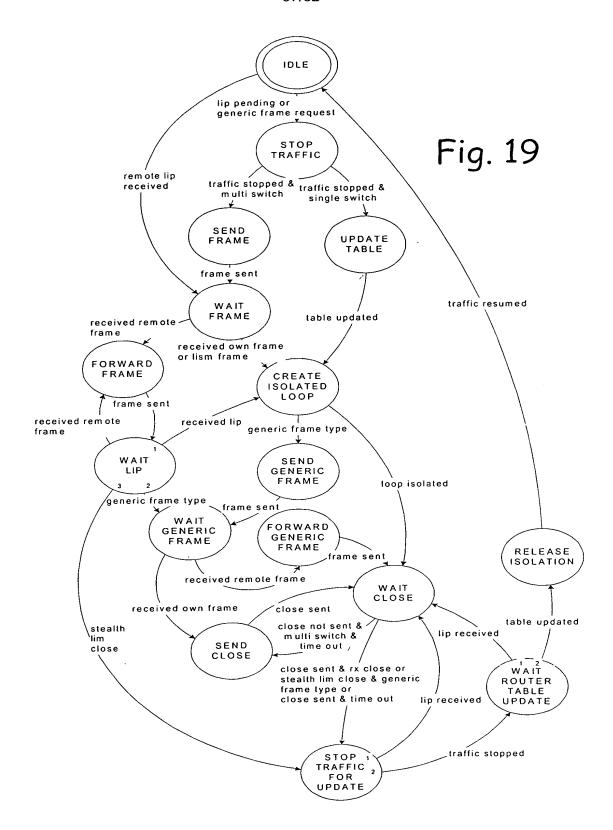
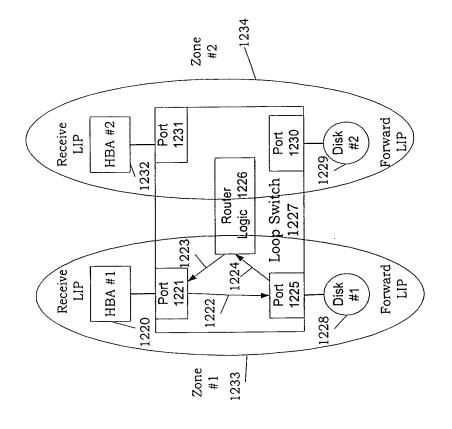


Fig. 18





1206

Router Logic 1208 Port 1213

Loop Switch 1202

Port 1212

1209 / HBA #2

1200 | HBA #1

Port 1210

Port 1211

1207

1201 | 1203

Receive LIP

Receive

LIP

Fig. 20

Forward LIP

Forward LIP

Disk #2

Disk #1

1204

Fig. 21

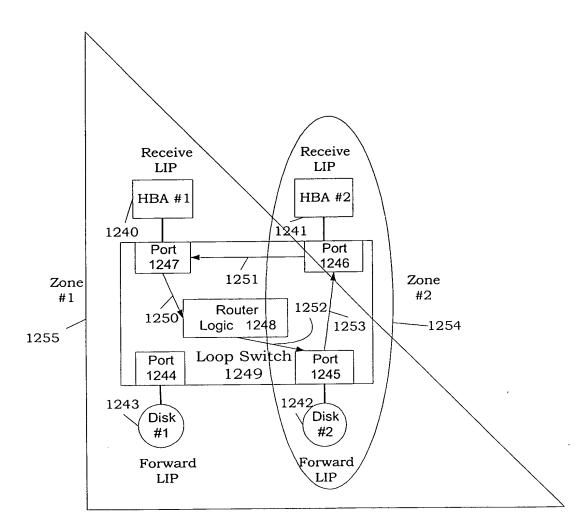


Fig. 22

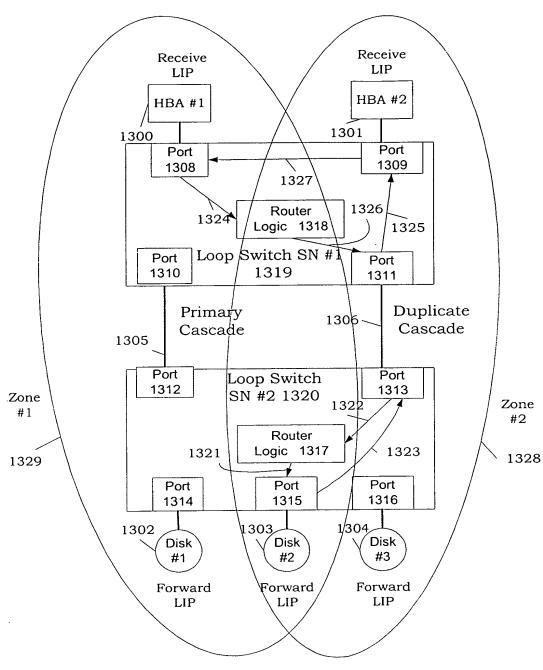


Fig. 23

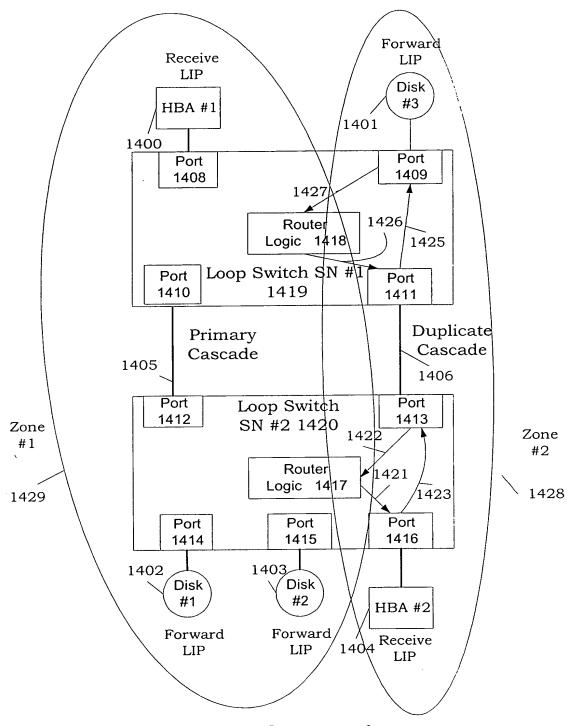


Fig. 24

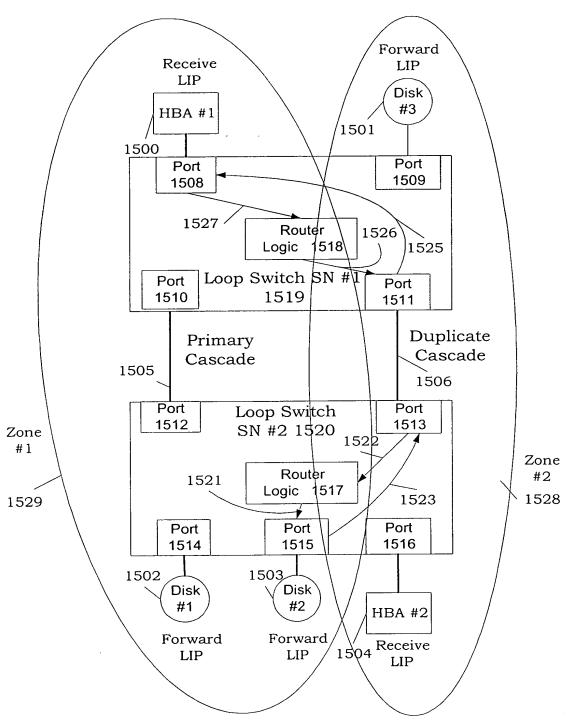


Fig. 25

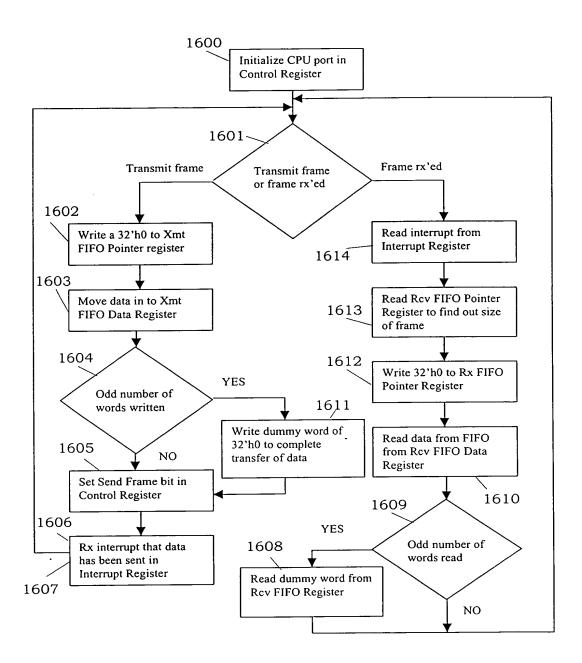


Fig. 26

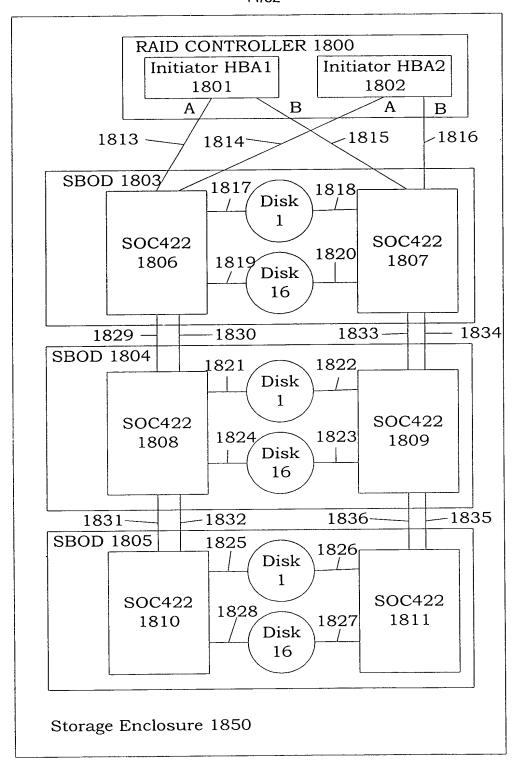
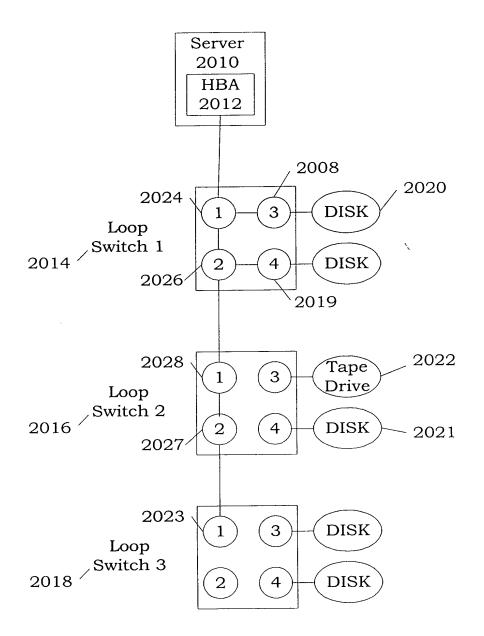
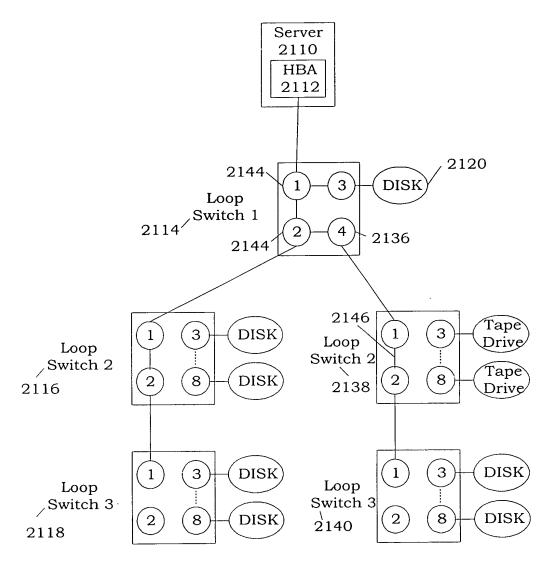


Fig. 27



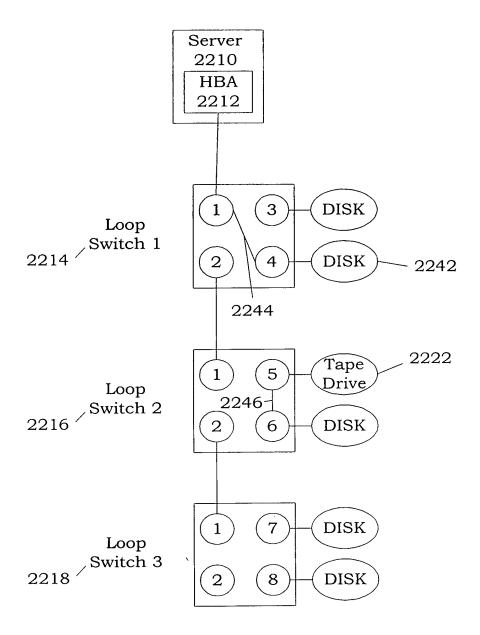
DISK = Fibre Channel Hard Disk Drive

Fig. 28



DISK = Fibre Channel Hard Disk Drive

Fig. 29



DISK = Fibre Channel Hard Disk Drive

Fig. 30

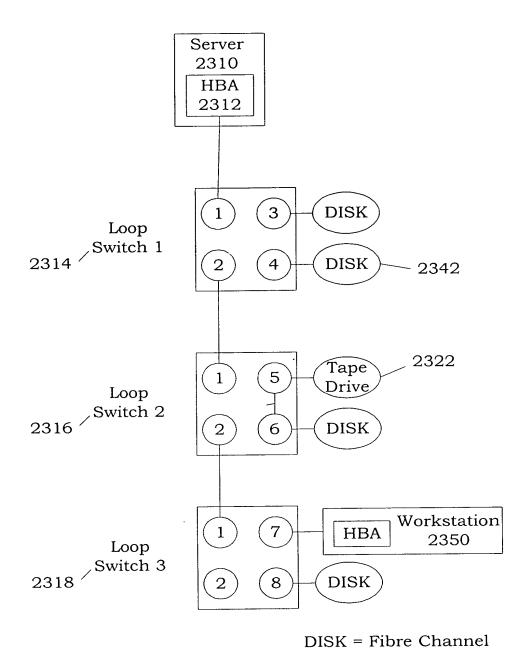


Fig. 31

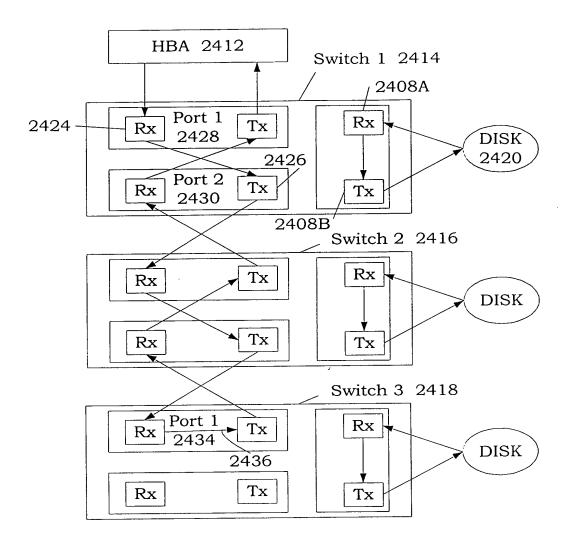


Fig. 32

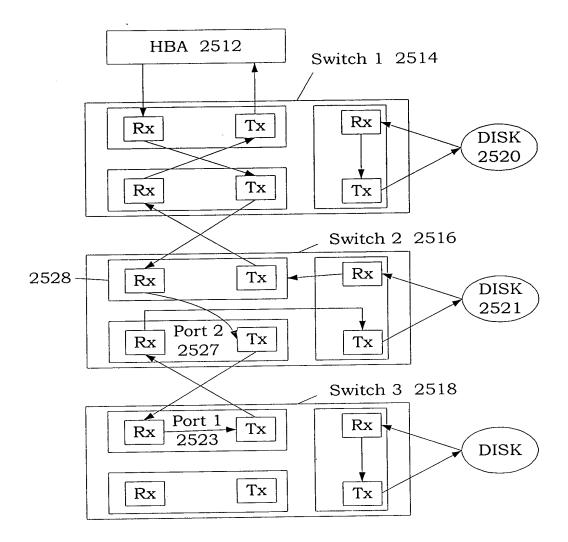


Fig. 33

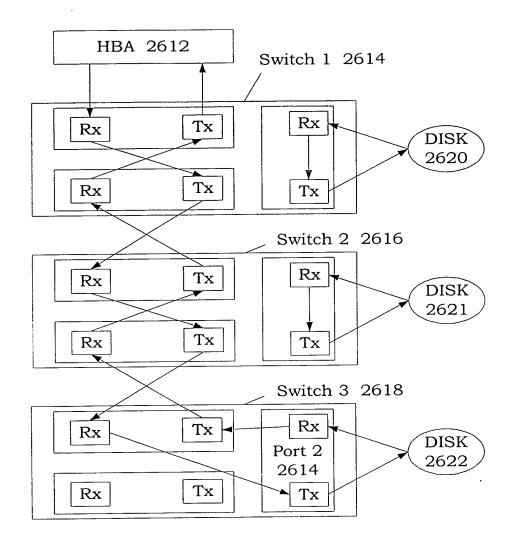


Fig. 34

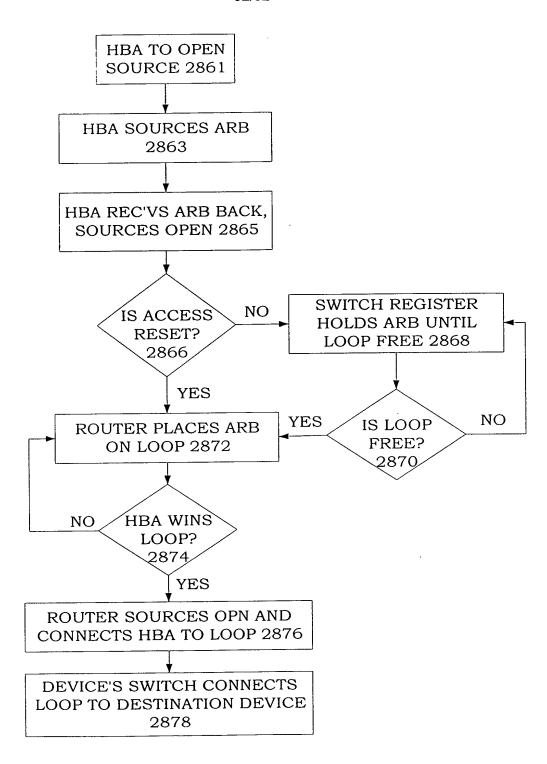


Fig. 35